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Book Reviews

Biology and management of rice insects, ed. E. A. Heindrichs, John Wiley and Sons, Ltd, Chichester, 1994, x + 779 pp., price £69.00.
ISBN 0-470-21814-2

It is easy to forget how dependent the majority of the world's population is on rice. This one crop constitutes half of the diet of more than 1.6 billion people and between a quarter and half of the diet of at least a further 400 million. As insect pests are one of the major constraints on rice production a new book on the biology and management of pests of rice, edited by the former head of the Department of Entomology at IRRI, has to be seen as a significant event. This book sets itself the ambitious task of providing a comprehensive treatment of rice entomology under a single cover.

Enormous changes in rice production technology have taken place over the past thirty years. The first high yielding 'green revolution' varieties in the 1960s were rapidly followed by varieties combining varying degrees of pest resistance or tolerance with increased vigour and earlier maturation. Coupled with the improving infrastructure in many Asian countries this has rapidly led to intensified production through double-cropping, maximisation of potential yield by application of fertiliser and pesticides, and mechanism of a number of the operations associated with rice cultivation. Japan, for example, increased yield from approximately 4 t ha^{-1} in 1960 to 5 t ha^{-1} at the beginning of the present decade, an increase which correlates well with fertiliser and pesticide input.

Heindrich's book covers the major components of rice entomology through a set of contributed articles, many written by former colleagues at IRRI, covering taxonomic aspects of rice insect pests and their natural enemies, the various components of pest control (host plant resistance, cultural and physical control measures, maintenance of control through natural enemies, and the use of insecticides), and two contrasting case studies of rice IPM implementation—the Japanese model, and IPM in Colombia. The recurring theme is the need to preserve the natural control mechanisms exercised on particular pest species by the local populations of predators and parasitoids. Intensive use and misuse of broad-spectrum insecticides in the 1960s and 1970s has been blamed for locally damaging outbreaks of brown planthopper and increasing resistance levels to organophosphorus and carbamate insecticides in other pest species.

The chapters concerned with the taxonomy and biology of pest species and their natural enemies will be useful to professional entomologists—the taxonomic key provided by A. Barrion and J. Litsinger takes up to 350 of the 748 text pages and claims to be the first covering essentially all the world's important rice pests and their natural enemies. Chapters concerned with fundamental biological principles, such as the excellent essay by Michael Loevinsohn on changes in pest populations resulting from changes in cropping practice and agricultural environment, provide valuable and authoritative sources; those dealing with 'current' pest management practice, however, are likely to date rapidly. I have put 'current' in quotes because it is noticeable that there has been a considerable delay between the completion of this book and its publication. The latest references quoted by any contributor are dated 1989; some chapters do not extend their coverage even to this date. Consequently this is not the book to refer to if you are looking for an assessment of the latest pest-resistant varieties, the impact of biotechnology on host plant resistance or of the new groups of selective insecticides on rice IPM. Some contributors provide historical reviews which pursue their subject back to the beginning of the century or earlier, and while this information is interesting it can mostly be found elsewhere.

G. le Patourel

Pasture doctor: a guide to diagnosing problems in pastures. J. Millar, Butterworth-Heinemann, Oxford, 1995, ix + 62 pp., price £11.99
ISBN 0 7506 8930 7

The maintenance of high quality pasture is an essential feature of a successful grazing industry. However, the management of pastureland is probably one of the most complex of agricultural tasks, with the correct diagnosis

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